

## REMARKS

Claims 22, 24, 26 and 28 have been amended. Claims 22, 24 to 26 and 28 to 31 remain active in this application.

Claims 22, 24 to 26 and 28 to 31 were rejected under 35 U.S.C. 112, first paragraph, as not complying with the written description requirement. These claims have been amended to overcome the rejection.

Claims 22, 24 to 26 and 28 to 31 were rejected under 35 U.S.C. 103(a) as being unpatentable over Lee (U.S. 6,162,671) in view of Kwag et al. (U.S. 6,232,228) and Kogure et al. (U.S. 5,250,471) and as being unpatentable over Kwag et al. in view of Lee and Kogure et al. The rejections are respectfully traversed.

Claim 22 relates to a method of etching only for TaN, TiN, Cu, FSG, TEOS, and SiN from a semiconductor body in semiconductor device processing. In accordance with this method, a solution is formed by combining HF with a concentration of about 49% with H<sub>2</sub>O<sub>2</sub> with a concentration of from about 19% to about 30% in deionized water, the solution consisting of a volume ratio of from about 1 to 3 parts HF, from about 1 to 2 parts H<sub>2</sub>O<sub>2</sub> and from about 10 to about 30 parts deionized water and then applying the solution to the semiconductor body at at least about room temperature. None of the applied references teaches an etching solution for the listed materials in the range as claimed. There is no teaching or suggestion to combine the references even were they to teach or suggest that which is claimed in claim 22.

Claim 24 relates to a method for etching one or more of TaN, TiN, Cu, FSG, TEOS, and SiN from a semiconductor body in semiconductor device processing. In accordance with this method, a solution is formed by combining HF with a concentration

of about 49% with  $\text{H}_2\text{O}_2$  with a concentration of about 30% in deionized water, the solution consisting of a volume ratio of about 2 parts HF, about 1 part  $\text{H}_2\text{O}_2$  and about 21 parts deionized water and applying the solution to the semiconductor body with the solution being at about room temperature. None of the applied references teaches an etching solution for the listed materials in the range as claimed. There is no teaching or suggestion to combine the references even were they to teach or suggest that which is claimed in claim 24.

Claim 26 relates to a method for etching one or more of TaN, TiN, Cu, FSG, TEOS, and SiN from a semiconductor body in semiconductor device processing. The method comprises the steps of forming a solution by combining HF with a concentration of about 49% with  $\text{H}_2\text{O}_2$  with a concentration of about 30% in deionized water, the solution consisting of using a volume ratio greater than about 1 part HF, about 1 part  $\text{H}_2\text{O}_2$  and about 20 deionized water and applying the solution to the semiconductor body with the solution being at a temperature of  $40^\circ\text{C}$  to  $50^\circ\text{C}$ . None of the applied references teaches an etching solution for the listed materials in the range as claimed. There is no teaching or suggestion to combine the references even were they to teach or suggest that which is claimed in claim 26.

Claim 28 relates to a method for etching one or more of TaN, TiN, Cu, FSG, TEOS, and SiN from a semiconductor body in semiconductor device processing. The method comprises forming a solution by combining HF with a concentration of about 49% with  $\text{H}_2\text{O}_2$  with a concentration of about 30% in deionized water, the solution consisting of using a volume ratio of about 2 part HF, about 1 part  $\text{H}_2\text{O}_2$  and about 21 parts deionized water and applying the solution to the semiconductor body with the

solution being at a temperature of from about 40°C to about 50°C. None of the applied references teaches an etching solution for the listed materials in the range as claimed. There is no teaching or suggestion to combine the references even were they to teach or suggest that which is claimed in claim 28.

The remaining claims depend from one or more of the above discussed claims and therefore define patentably over the cited references for at least the reasons presented above with reference to the claims from which these claims depend.

In view of the above remarks, favorable reconsideration and allowance are respectfully requested.

Respectfully submitted,



Jay M. Cantor  
Attorney for Applicant(s)  
Reg. No. 19,906  
Texas Instruments Incorporated  
P. O. Box 655474, MS 3999  
Dallas, Texas 75265  
(301) 424-0355 (Phone)  
(972) 917-5293 (Phone)  
(301) 279-0038 (Fax)